

In the Specification

Please replace the paragraph beginning at Page 5, line 13 with the following:

In the scrubbing operation, poor scrubbing of acid gases in scrubber towers can be due to the small flowrates that are processed through these systems. The diameters of scrubber towers processing such small flowrates are correspondingly small, which when combined with the use of conventional large diameter packing can result in a packing element diameter to column diameter which is excessively high and results in large wall effects in the scrubber tower. Such scrubber towers as a result require large water flows, which in turn can cause channeling, flooding and slugging, with pockets of process gas passing untreated through the scrubber system. Due to the poor scrubbing of these systems, corrosion in the ducting downstream of these systems is commonly observed, which is due to condensation of the untreated off-gases from the scrubber. When halide gases are being treated in the effluent stream, the off-gases from the scrubber tower will as a result of the poor scrubbing performance of the scrubber contain unscrubbed halogen content. The unscrubbed halogen content may result in formation of pools of highly concentrated acids condensed at the VLE vapor/liquid equilbria (VLE) dewpoint condition, and a substantially higher than expected acid/water mix.

Please replace the paragraph beginning at Page 18, line 4 with the following:

The effluent gas stream treatment system of the present invention in various embodiments thereof provides significant advantages over prior art treatment systems,

including resistance to clogging within the constituent effluent gas treatment units and associated flow piping and channels, enhanced resistance to corrosion as a result of efficient gas/liquid interface structures, extended on-stream operating time before maintenance is required, low water usage rates when scrubbing treatment is employed, superior scrubbing efficiency, with removal levels greater than 99.99% by weight of effluent scrubbable species, and reduction below TLV threshold limit value (TLV) levels for halogen species such as HCl, Cl₂ and HF, oxidative destruction of hazardous species below TLV levels, elimination of corrosive condensation of acids in process lines downstream of the oxidizer unit, flexible arrangement of constituent treatment units in the effluent gas treatment system, and the capability for accommodating multiple sources of effluent gas from upstream process facilities.

Please replace the paragraph beginning at Page 32, line 11 with the following:

The bottoms from the effluent gas stream pre-treatment column 210 in line 232 and the bottoms from scrubber 194 in line 236, are joined in line 238 and may be passed to waste liquid discharge or other treatment.

Please replace the paragraph beginning at Page 32, line 15 with the following:

FIG. 5 is a schematic flowsheet of a further effluent gas treatment system embodiment of the invention. The effluent gas stream is introduced in line 312 to the pre-treatment column 308, together with nitrogen in line 310 and water in line 302 introduced via nozzle 306. The water stream to

nozzle 306 may be augmented with recycled liquid from line 304. The bottoms of pre-treatment column 308 may be passed to line 316.

Please replace the paragraph beginning at Page 34, line 1 with the following:

The scrubber 464 is constructed as previously described, and receives scrubbing liquid in line 478 from recycle line 472, deriving from the bottoms of the pre-treatment column in line 468 and the scrubber bottoms combined therewith in line 470 as shown. The recycle liquid in line 472 may be heat exchanged in heat exchanger 472 474 by Chilled water in line 476.

Please replace the paragraph beginning at Page 34, line 7 with the following:

The scrubbing liquid in line 478 may be augmented by addition thereto of chemical liquid from line 494. The chemical liquid for such purpose is made of water introduced to mixing vessel 4809 480 in line 482 and dry chemical introduced to the vessel 480 in line 484.

Alternatively, or additionally, liquid chemical in vessel 486 may be pumped in line 488 by pump 490 to line 492 in which the liquid chemical may be diluted with water introduced in such line. In this manner, the system shown in FIG. 7 is adapted to utilize wet or dry chemical addition in the scrubbing liquid, as may be necessary or desirable in a given end use application of the treatment system of the invention.

Please replace the paragraph beginning at Page 36, line 1 with the following:

FIG. 10 is a schematic representation of an effluent gas treatment system, designated generally by reference numeral 600, according to yet another embodiment of the invention, utilizing a pre-treatment unit, an oxidation unit, and a scrubber, wherein the scrubber and oxidation unit are coupled via a quench chamber.

Please replace the paragraph beginning at Page 41, line 5 with the following:

By providing the oxidation unit and the pre-treatment (i.e., pre-oxidation treatment) scrubbing and post-oxidation scrubbing units in a single unitary cabinet, a compact apparatus conformation is provided, having a small footprint, accommodating the deployment of the effluent gas stream treatment system conveniently within a semiconductor fab fabrication facility, or other process facility in which the effluent gas stream being treated by the system of the invention is located.